

Institutionalization of a routine data quality assessment (RDQA) procedure for improved data quality of electronic patient medical records in Kenya

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Program/Project Purpose: Since 2011, the Kenya Ministry of Health (MOH), with support from PEPFAR, led implementation of electronic medical record (EMR) systems, as a cornerstone of the national HIV/AIDS care and treatment program. The International Training and Education Center for Health (I-TECH) has supported MOH to scale-up EMRs in more than 300 health facilities in Kenya. Return on investment depends upon data quality in EMRs.

To support progressive EMR data quality improvement, I-TECH developed a Routine Data Quality Assessment (RDQA) standard operating procedure and analysis tool. The RDQA procedure was defined in collaboration with MOH and integrated within existing policies and procedures for data quality in health records.

Structure/Method/Design: The RDQA procedure involves comparison of selected data elements from HIV patient charts (MOH257 “blue card”), with data from the EMR. The RDQA tool provides automated comparison of values, with graphical summaries of the level of completeness, consistency, and concordance of each data element.

The RDQA exercise focuses on facilities with complete data migration and begins with an orientation for all participants. RDQA teams, involving county health supervisors, PEPFAR implementing partners, and facility personnel, begin by selecting a random sample of approximately 100 patient records per site. Then, one team abstracts a set of 25 high-value data elements from the “blue card” while a second team abstracts data from the EMR into the RDQA tool.

Once data abstraction and merging are completed, the RDQA team reviews the results and devises action plans to improve data quality through routinized data cleaning. Each RDQA (including debriefing) is carried out within one day per facility.

Outcome & Evaluation: In 2014–15, 138 baseline RDQAs and 42 repeat RDQAs were conducted. I-TECH supported facility personnel to share RDQA results during semi-annual county-level EMR stakeholder meetings. These presentations motivated other sites to plan for RDQAs, and fostered a culture of on-going data quality improvement.

Going Forward: The RDQA procedure for EMR data has been well received and institutionalized as a method for progressively improving EMR data quality in Kenya. There is an interest in expanding the RDQA procedure to additional areas of care and patient groups.

Funding: None.

Abstract #: 1.032_TEC

Why common fever thermometers are not enough

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Program/Project Purpose: This paper describes a cross disciplinary design project aiming at developing a fever thermometer for east Africa, with clear cut-off points for community health workers and caregivers, based on medical evidence, and adapted to local realities and cultural notions. The Frugal Thermometer project is an initiative supported by the Centre for Frugal Innovation in Africa and it is carried out by the Leiden University Medical Centre and the Faculty of Industrial Design Engineering at Delft University of Technology since 2012.

The fever thermometer is an essential health technology and the entry point to a diversity of diagnostics in most healthcare systems. Nonetheless, the prevailing subjective nature of fever, makes it still today, a widely discussed topic amongst the medical community. The lack of accessibility to an accurate and reliable diagnostic of fever (i.e. the technology to measure body temperature variations and respective explanatory models), the misinterpretation of fever symptoms and its association with diseases such as Malaria, have direct implications on the costs of healthcare and on the health of patients seeking care. These are either misdiagnosed, over prescribed with medication, or lost from the health system because of a mismatch with expectations.

Health technologies, like the fever thermometer are an essential part of the delivery of primary healthcare services for global health. Despite the increasing engagement of the private sector and academia, there is a poor understanding of the barriers to their implementation across the different healthcare systems and their structures.

Structure/Method/Design: In this paper, the authors suggest that the crossing of medicine and design engineering has the potential to offer new perspectives to health technologies, by focusing on developing value-sensitive innovations that include consideration for human factors involved in the development, procurement, use and disposal of technologies (e.g. individual, relational and organizational aspects), to the technical eco-system and underlying financing model needed to sustain such technologies.

Outcome and Evaluation: This paper exposes a systemic perspective on the assessment of fever in rural Africa by describing how the engagement of these two disciplines in a series of design projects lead to relevant insights about the current barriers to access and proper use of existing fever thermometers and provides scenarios and concepts towards new solution directions.

Going Forward: The Centre for Frugal Innovation in Africa and the partnering universities actively pursue this applied research aiming at generating and disseminating knowledge about the contribution of frugal innovation to global health.

Abstract #: 1.033_TEC